
USACE / CESAJ

Adapted for CESAJ programs May 2002.

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS

CESAJ 01525 (Oct 2002)

Superseding
CESAJ 01525 (May 2002)

JACKSONVILLE DISTRICT LOCAL MASTER GUIDE SPECIFICATION

SECTION 01525

GENERAL SAFETY REQUIREMENTS 04/03

NOTE: CESAJ Master 01525 was developed from UFGS
01525N and covers, general site safety .

It is not for use at Hazardous Toxic Radioactive
Waste (HTRW) remediation sites. For HTRW remedial
sites including "yank a tank" use UFGS 01351A
SAFETY, HEALTH, AND EMERGENCY RESPONSE (HTRW/UST)
not CESAJ 01525 GENERAL SAFETY REQUIREMENTS.

CESAJ 01525 specifies requirements to protect
persons, prevent property damage and comply with
regulatory laws. CESAJ 01525 is for use for general
construction and dredging. CESAJ 01525 may be used
"stand alone" for renovation and demolition projects
when pre-design site characterization of asbestos
containing building materials and lead based paint
removals are below 40 CFR 261.4 regulatory limits.
Designers need to coordinate applicable safety in
Sections for ACBM, LBP, Trench Safety, etc., as
applicable.

Suggested user changes are welcome. Using e-mail
for feedback is encouraged. Comments should be
directed to:

Engineering, Design, Specifications Section
POC Mrs. Vivian Pursell 904-232-2475
(vivian.w.pursell@saj02.usace.army.mil)

or

ConOps, Construction, Quality Assurance Section
(& District Diving Coordinator)
POC Mr. Bruce Tappmeyer, 904-232-3835
(bruce.a.tappmeyer@saj02.usace.army.mil).

or

District Safety Office
POC Mike Scholl, 904-232-2554
(michael.p.scholl@saj02.usace.army.mil)

CESAJ 01525 is for use by both District in-house and A/E Designers.

For A/E specifiers: If guidance is needed, contact Jacksonville District Design Team Lead Engineer for technical questions or Programs Project Manager for policy.

For "Support For Others" (e.g., Military Bases or South Florida Water Management District) identify special safety requirements of Base/Local Sponsor's Safety Office. (For example, in Florida for road work, a police detail is required for roadwork within State and County rights-of-way.)

Note for A/E Specifiers - Corps of Engineers Accident Prevention Plan format is located in Appendix A of COE EM 385-1-1. Contractors are required to submit Activity Hazard Analyses (AHAs) and related supplemental plans, programs, procedures listed in Para 12, on pages A-3 and A-4 as needed for project work.

Ensure coordinated contracts requirements for additional special safety plans are specified within Div 02 - 16 sections. For environmental remediation contracts, with multiple Task orders, use UFGS 01351A and specify a Site Specific Health and Safety Plan (SSHP) for each task order. Call District Safety Office Richard Roche 904-232-2019 for applicability.

NOTE: Brackets are used for designer choices or when text must be supplied. Section editing must be consistent with project management plan (PMP) and site specific requirements. Specifier and construction field reviewers must identify and describe high risk safety concerns and ensure they are in final project manual.

Make CESAJ 01525 site and project work specific. Identify and comply with local regulations. Specifiers, make section, clear, concise, correct and complete, edit out items not applicable to project.

PART 1 GENERAL

1.1 SUMMARY

Section covers general site safety, accident prevention, accident reporting and Jacksonville District specific safety procedures, "Safety Pays" accident prevention incentive and recognition program.

NOTE: Edit Section Reference brackets based on work. Ensure Section 00700 CONTRACT CLAUSES has

correct FAR Clauses. Assume dredging jobs, pump stations, trenching/culverts have confined space.

Unless paint test results are known assume paint removal has lead paint.

Use asbestos abatement section for all structure demolition, roof replacements, building renovations. Existing asbestos survey or location for viewing should be made available to bidders in Section 00300 INFORMATION AVAILABLE TO BIDDERS.

1.1.1 Related Section

Refer to Section 01500 TEMPORARY CONSTRUCTION FACILITIES for safety signs and required bulletin board posters.

1.2 REFERENCES

NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest change to this guide specification.

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ASME INTERNATIONAL (ASME)

ASME B30.5 (1994) Mobile Cranes

ASME B30.22 (1993) Articulating Boom Cranes

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10 (1995) Portable Fire Extinguishers

NFPA 70 (1999) National Electrical Code

NFPA 241 (1996) Safeguarding Construction, Alteration, and Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CESAJP 385-1-2 (1998) Safety Pays

COE CESAJR 385-1-1 (1998) Safety and Occupational Health Program

COE EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual

U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA)

MUTCD, PART 6 (2000) Manual on Uniform Traffic Control

Devices - Work Zones

1.3 SAFETY MANUALS

COE EM 385-1-1, COE CESAJR 385-1-1, COE CESAJP 385-1-2 are available at <http://www.saj.usace.army.mil/conops/index.html>. One copy of each will be provided to Contractor at a Preconstruction Conference (refer to Section 01310 ADMINISTRATIVE PROCEDURES. COE EM 385-1-1 is also at above web site in a Spanish version. Additional paper copies of COE EM 385-1-1 may be purchased for \$30.00 using a check or money order as follows:

U.S. Government Printing Office (GPO)
 Superintendent of Documents
 P.O. Box 371954
 Pittsburgh, PA 15250-7954
 (GPO Stock Number for the manual is 0008-022-00-310-0)

or

order by credit card by calling 202-512-1800 (Master Card or Visa only)

Additional copies of COE CESAJR 385-1-1 and COE CESAJP 385-1-2 will be provided upon written request.

1.4 DEFINITIONS

NOTE: Delete definitions and safety staff requirements not in project scope of work. For jobs under \$1M construction cost, or less complicated civil or heavy construction work, with 5 year experience and general site safety class Superintendent or QC System Manager may act as Safety Officer. Coordinate safety staff and qualifications with Sections 01451 CONTRACTOR QUALITY CONTROL or 01452 DREDGING/BEACH FILL PLACEMENT - CONTRACTOR QUALITY CONTROL.

Use definitions found in COE EM 385-1-1 and COE CESAJR 385-1-1 in submitted work plans.

NOTE: Eliminate bracket if no requirement for CIH, CSP, or Lead or Asbestos Site Competent Person.

Safety Officer - Qualified employee or competent person trained or having required experience in safety, occupational health and who is assigned overall responsibility to oversee on-site safety.

Safety Specialist - A person with specialized training or experience in safety and occupational health for specific items of work.

Qualified Person - One who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work or the project.

[Certified Industrial Hygienist (CIH)- An industrial hygienist is an individual who is certified by the American Board of Industrial Hygiene.]

[Certified Safety Professional - A safety manager, safety specialist, or safety engineer that has passed the CSP exam administered by the Board of Certified Safety Professionals.]

[Competent Person - A competent person is one who is trained and capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.]

1.5 SUBMITTALS

NOTE: Refer to Section 01330 SUBMITTAL PROCEDURES for Government office identifier designations. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.

Diving Plan, Sample Scaffold, Dredge Plant Inspection Checklists, Crane Equipment Records, Blasting Plan, and Critical Lift Plan are all bracket choices and need to be selected based on work.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G|COR

Within 20 calendar days after Notice of Award, submit Accident Prevention Plan with applicable specific work plans required by paragraph PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL of Appendix MINIMUM BASIC OUTLINE FOR ACCIDENT PREVENTION PLAN of COE EM 385-1-1. Refer to paragraphs ACCIDENT PREVENTION PLAN (APP) and ACCIDENT PREVENTION below.

Activity Hazard Analyses (AHA); G|COR

Refer to paragraph ACTIVITY HAZARD ANALYSES (AHA) below.

Employee Safety and Health Indoctrination (ESHI) and Training Plan

Refer to paragraph SAFETY AND HEALTH INDOCTRINATION AND TRAINING below.

Hazard Communication Plan

Refer to paragraph HAZARD COMMUNICATION below.

Emergency Response Plan

Refer to paragraph EMERGENCY RESPONSE PLAN below.

Hurricane and Severe Storm Plan; G|COR

Refer to paragraph HURRICANE AND SEVERE STORM PLAN below.

[Dive Operations Plan; G|COR

Refer to paragraphs DIVE PLAN, DIVING OPERATIONS, and DIVE OPERATIONS below.]

[Critical Lift Plan; G|COR

Submit a critical lift plan for each non-routine crane lift using format described in Section MACHINERY AND MECHANIZED EQUIPMENT of COE EM 385-1-1. Refer to paragraph CRITICAL LIFT PLANNING PROCEDURE AND POLICY below.]

Confined Space Plan; G|COR

Refer to paragraphs CONFINED SPACE PLAN, CONFINED SPACE ENTRY, and WORKING IN CONFINED SPACES below.

Spill Response Plan; G|COR

Refer to paragraph SPILL RESPONSE PLAN below.

[Blasting Safety Plan; G|COR

No later than 10 calendar days after receipt of Notice to Proceed, submit a Blasting Safety Plan for review and acceptance fully describing use of explosives and required site safety procedures to comply with Section BLASTING of COE EM 385-1-1. The Contracting Officer shall have 14 calendar days for review and acceptance. If the Plan is not acceptable, the Contractor shall revise and resubmit the Plan. The Contracting Officer shall have 7 calendar days for review and acceptance of the revised Plan. The Plan may be an Appendix to Accident Prevention Plan (APP). No blasting shall be started until after the Plan has been reviewed by the Contracting Officer. Acceptance by the Contracting Officer will not relieve the Contractor of the responsibility for producing safe and satisfactory results. Refer to paragraph "Operational Blasting Plan" below.]

SD-04 Samples

[Sample Scaffold

Erect a sample section of scaffold for on-site fall protection training. Refer to paragraph SAFE ACCESS AND FALL PROTECTION below.]

SD-07 Certificates

Qualifications; G|COR

Qualifications, and training certificates of safety personnel

performing as safety specialists or assisting as Quality Control Staff. Includes first aid and CPR certifications. Refer to paragraph SAFETY OFFICER below.

[Dredge Plant Inspection Checklists;G|COR

Checklists are located in COE CESAJR 385-1-1 as well as Jacksonville District web site shown in paragraph SAFETY MANUALS above.]

[Crane Equipment Records

Equipment inspections and maintenance records for cranes and other equipment used to lift material, equipment or support personnel. See ASME B30.5 and ASME B30.22. Refer to paragraph "Crane Notification" below.]

1.6 ACCIDENT PREVENTION PLAN (APP)

Prepare APP using format in Appendix MINIMUM BASIC OUTLINE FOR ACCIDENT PREVENTION PLAN of COE EM 385-1-1. See Appendix ACCIDENT PREVENTION PROVISIONS FOR CONTRACTORS AND IDENTIFIED GOVERNMENT ACTIVITIES of COE CESAJR 385-1-1 for additional detail.

1.6.1 Contents

1. Signature Sheet
2. Background Information
3. Statement of Safety and Health Policies
4. Responsibilities, Lines of Authorities
5. Subcontractors and Suppliers
6. Training
7. Safety and Health Inspections
8. Safety and Health Expectations, Incentive Programs
9. Accident Reporting
10. Medical Support
11. Personal Protective Equipment
12. Supplemental ("Tabbed") Work Specific Plans required by COE EM 385-1-1
13. Supplemental Information on how Contractor will meet major applicable portions of COE EM 385-1-1

1.6.2 Tabbed APP Appendices

Submit tabbed appendices to Accident Prevention Plan including: Activity Hazard Analyses; Jacksonville District work plans and applicable supplementary specific plans; and, procedures listed in Appendix A, paragraph PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL of COE EM 385-1-1 or COE CESAJR 385-1-1 Appendices.

1.6.2.1 Jacksonville District Required Work Plans

Jacksonville District Required Work Plans include:

- Tab A - Activity Hazard Analysis Worksheets
- Tab B - Employee Safety and Health Indoctrination and Training (See sample ESHI appended to the end of this Section)
- Tab C - Hazard Communication
- Tab D - Hurricane and Severe Storm Plan

Tab E - Emergency Response Plan
 Tab F - Dive Plan
 Tab G - Critical Lift Planning Procedure and Policy
 Tab H - Confined Space
 Tab I - Spill Response

1.6.2.2 Supplementary Plans in COE EM 385-1-1

NOTE: Select appropriate supplementary plan.
REMEMBER TO DELETE BRACKETS.

Submit additional tabbed supplementary plans listed in Appendix A, paragraph PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL of COE EM 385-1-1 that are applicable to work as follows:

[Temporary Facility Layout]
 [Respiratory Protection]
 [Health Hazard Control]
 [Lead Abatement Plan]
 [Asbestos Abatement Plan]
 [Abrasive Blasting]
 [Hazardous Energy "Lock Out/Tag Out"]
 [Access and Haul Road Plan]
 [Demolition Plan (engineering and asbestos surveys)]
 [Fire Prevention]
 [Compressed Air Plan]
 [Formwork Shoring]
 [Lift Slab (tilt up)]
 [HTRW Site Specific Health and Safety Plan]
 [Blasting Plan]

1.7 ACTIVITY HAZARD ANALYSES (AHA)

Submit AHAs as a tabbed APP Appendix. See Figure ACTIVITY HAZARD ANALYSIS of COE EM 385-1-1 for sample form. Contractor can download activity hazard analysis form (MS Word file) at Jacksonville District's Construction web page, "QC Forms":

http://www.saj.usace.army.mil/conops/construction/construction_forms.htm.

Describe activity being performed; sequence of work; specific hazards anticipated; control measures to eliminate or reduce each hazard to acceptable levels; training requirements for all involved; and, competent person in charge of that work.

1.8 SAFETY AND HEALTH INDOCTRINATION AND TRAINING

Submit Safety and Health Indoctrination and Training Plan as an APP tabbed appendix in accordance with paragraph INDOCTRINATION AND TRAINING of Section PROGRAM MANAGEMENT of COE EM 385-1-1. Provide a sample Employee Health and Safety Indoctrination (EHSI) Sheet.

1.8.1 New Employee Indoctrination

Describe new employee indoctrination and training required to be completed prior to an employee working on site. Document employee orientation. Keep records on file at project site or nearest office. Each employee shall sign an ESHI sheet. Sample form is on the web site indicated in the paragraph CONSTRUCTION FORMS AND DETAILS below.

1.8.2 Visitor Briefing

Describe procedures for safety briefing site visitors. Train them on specific site hazards, site safety controls (i.e., hard-hat areas). Provide needed protective clothing (i.e., hard hats, reflective vest) and equipment (i.e., ear plugs, safety glasses) before they enter construction limits. Document visitor briefing with a file and visitor sign-in log on site. Report visitors in QC daily report.

1.9 HAZARD COMMUNICATION

Comply with OSHA 1910.1200 (the Hazard Communication Standard) and provide a Hazard Communication Plan describing implementation of the standard. Ensure site personnel including subcontractor employees, visitors, Contracting Officer personnel are informed about health and physical hazards associated with materials being used. Provide a hazardous materials inventory to Contracting Officer upon request. Ensure proper labeling of hazardous material containers. Ensure Material Safety Data Sheets are on site.

1.10 HURRICANE AND SEVERE STORM PLAN

NOTE: The following paragraph is for use in all projects. HOWEVER, DELETE BRACKETED ITEMS BELOW WHEN DREDGING/BEACH NOURISHMENT IS NOT AN OPTION IN THE PERFORMANCE OF THE WORK. REMEMBER TO RENUMBER PARAGRAPHS ACCORDINGLY.

Submit proposed procedures to be taken to prevent: injury; damage to materials, equipment, and completed construction; and, minimize delays due to severe weather. A sample format is provided on the web site indicated in paragraph CONSTRUCTION FORMS AND DETAILS below:

a. Address following conditions:

Hurricanes - Preparations prior to forecasted hurricane at 72 hours, 48 hours and 6 hours prior to predicted storm arrival.

Tornado/Water Spout - Actions to be taken for tornado warning and tornado warnings.

Thunderstorms/Squalls - Actions to be taken for high winds, lightning, heavy rainfall.

b. Include:

1. Provide detailed descriptions for actions to be taken.

2. The time intervals before storms when action will be taken for each type hazard.

3. List of equipment to be used on the project and its ability to handle adverse weather.

[4. Distance from work area to a safe place and time required to move plant and equipment.]

5. Method of securing equipment.
6. Methods of securing equipment not moved.
7. Plan of evacuation to include immediate reaction plans to be taken for all storm occurrences, particularly sudden storms.
- [8. List of equipment or vessels to be used to move plant and equipment to a safe harbor (tug boats, work boats, etc.); include name and horsepower of the equipment.]
9. A statement that full time monitoring of NOAA marine weather broadcasts or other local commercial weather forecasting services will be the Contractor's primary source of information in the decision process to implement action under severe weather plan.

1.11 EMERGENCY RESPONSE PLAN

NOTE: Delete bracketed information if not applicable.

Describe planned response procedures and planned drills as applicable for medical, fire fighting, injury evacuation, wildfire [, or man overboard]. Submit certificates or wallet cards for designated First Aid and Coronary Pulmonary Resuscitation (CPR) responders. Provide planned communication methods to monitor employees working in remote areas. Provide sample posting sheets for local emergency responder phone numbers, reporting instructions, strip map to nearest medical treatment facility. Provide site sketch of location of first aid kits and fire extinguishers.

1.12 DIVE PLAN

NOTE: Include paragraph in all contracts where work is adjacent to, on, or over water.

See paragraph DIVE OPERATIONS below and Appendix CONTRACT DIVING OPERATIONS of COE CESAJR 385-1-1. Dive planning is required on all projects with work on, adjacent to or over water; see paragraph DIVING OPERATIONS below. The dive plan shall address all requirements of Section CONTRACT DIVING OPERATIONS of COE EM 385-1-1, and Appendix CONTRACT DIVING OPERATIONS of COE CESAJR 385-1-1.

1.13 CRITICAL LIFT PLANNING PROCEDURE AND POLICY

Critical lift is defined in paragraph "Equipment operation" of Section MACHINERY AND MECHANIZED EQUIPMENT of COE EM 385-1-1. In accordance with paragraph "Critical lift plans" of Section MACHINERY AND MECHANIZED EQUIPMENT of COE EM 385-1-1, each critical lift requires a load and lift specific critical lift plan to be developed during preparatory phase. A critical lift plan is required whenever crane loads meet or exceed 75 percent of crane load capacity in any configuration. Describe who is responsible to identify such lifts, what procedures will be performed to prepare, review and approve critical lift plans, when critical lift plans will be submitted to Contracting Officer. Provide qualifications of

persons identifying and overseeing critical lifts.

1.14 CONFINED SPACE PLAN

Confined space plan shall comply with paragraph CONFINED SPACE of Section HAZARDOUS SUBSTANCES, AGENTS AND ENVIRONMENTS of COE EM 385-1-1. Describe planning, control, policy and procedures to identify confined spaced, safe entry procedures and policy for emergency evacuation of injured persons.

1.15 SPILL RESPONSE PLAN

Provide information on hazardous chemicals and liquids anticipated to be stored on site and how Contractor proposes to contain spills, safely respond and clean up spills. Describe planning, controls, personal protective equipment and clean-up procedures.

1.16 SAFETY OFFICER

NOTE: Standard procedure is for Safety Officer to be an additional duty for Superintendent/QC System Manager. However, for large (greater than \$5 Million) complex, dangerous projects, specify no other duties for Safety Officer.

Designate an on-site Safety Officer to manage accident prevention program. Safety Officer or assistant shall be on site during all work. [Safety Officer may not have other duties in addition to Safety Officer.] Safety Officer shall report to and work directly for Contractor's on-site top manager (or higher level official) or corporate safety officer. Safety Officer shall be authorized to take immediate steps to correct unsafe and unhealthful conditions. Submit Safety Officer's resume of qualifications and job description with within 20 days after Notice of Award.

1.16.1 Safety Officer Qualifications

Safety Officer shall have five years construction site experience on similar projects with experience as site safety specialist or Safety Officer. Safety Officer shall be qualified and have ability to manage on-site Contractor safety program, identify hazards and identify resources necessary to reduce hazards. Must have worked on similar types of projects and completed an OSHA training qualification class of at least 10 hours of classroom instruction. To be credited for satisfying experience requirements, a minimum 50 percent of the time shall have been devoted to safety and occupational health work. First aid work is not creditable.

1.17 DISTRICT SAFETY PROGRAM

1.17.1 Site Safety Inspections by District Personnel

District Safety Office personnel perform periodic safety inspections on contract work sites as a staff function on behalf of District Engineer. District Construction Quality Assurance personnel periodically inspect plant, equipment and contract sites and evaluate safety as part of District construction program. When contract diving operations occur District Dive Coordinator may visit to inspect and observe Contractor. Inspectors evaluate how well both District personnel and Contractor are complying with requirements in COE EM 385-1-1, COE CESAJR 385-1-1, approved Accident

Prevention Plan and supplements. Inspector reports will be submitted to Contracting Officer's Representative. Contractor will be notified of both accomplishments and deficiencies by Contracting Officer's Representative. Promptly correct deficiencies, document corrections and notify Contracting Officer.

1.17.2 Safety Pays Program

Safety Pays is described in COE CESAJP 385-1-2 located on Jacksonville District web site shown in paragraph SAFETY MANUALS above. Safety Pays is an incentive safety program where both Contractor and Contracting Officer's personnel are recognized for efforts to provide safer working environment.

1.18 MEETINGS

1.18.1 Phase Meetings

Refer to Section [01451 CONTRACTOR QUALITY CONTROL] [01452 DREDGING/BEACH FILL PLACEMENT - CONTRACTOR QUALITY CONTROL]. Activity Hazard Analysis for each definable feature of work shall be reviewed and personnel attendance documented by Contractor. Examination of safety controls equipment is on-going in follow-up phase and progress meetings.

1.18.2 Supervisor Weekly Safety Meetings

Hold weekly meeting with on-site supervisors, foremen and QC Staff, at project site. Supervisor meeting shall address prevention of accidents, lessons learned, items of concern. Attach minutes with Contract number, signatures of attendees, and a list of topics discussed to the Contractor Quality Control Daily Report.

1.18.3 Weekly "Tool Box Meeting"

Hold a brief weekly meeting with all on-site personnel before start of work shift on a safety subject planned to prevent problems. For example, if hot weather is expected, discuss heat stress prevention and treatment. Report subject and number of employees attending on the Contractor Quality Control Daily Report.

1.19 DISPLAY OF SAFETY INFORMATION

Refer to Section 01500 TEMPORARY CONSTRUCTION FACILITIES. Provide a bulletin board to display following for viewing by on-site construction personnel:

- a. Poster "Safety and Health Protection On the Job" required by Department of Labor, OSHA.
- b. Emergency phone numbers.
- c. Strip map with route to nearest emergency care facility.
- d. Accident Reporting and Workman's Compensation information.
- e. Applicable Activity Hazard Analyses (AHA).

1.19.1 Placarding

- a. Label confined spaces.

b. Post confined space entry permit at entry point prior to persons entering.

c. Label and placard all hazardous materials stored or encountered on site (refer to Clause HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (CESAJ ADAPTATION) of Section 00800 SPECIAL REQUIREMENTS).

d. Safety Scoreboard Sign.

e. Provide a sign indicating number of days since last lost time injury (refer to Section 01500 TEMPORARY CONSTRUCTION FACILITIES).

1.20 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to project including: equipment operating manuals; manufacturer catalogs; Material Safety Data Sheets (MSDSs) on-site. (Refer to Clause HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (CESAJ ADAPTATION) of Section 00800 SPECIAL REQUIREMENTS.) Maintain one copy of APP with AHA and supplemental plans required by the contract.

1.21 REPORTS

1.21.1 Complaints and Accident Investigation

Contracting Officer will investigate complaints of unsafe or unhealthful working conditions received from Contractor employees or others. Contracting Officer will assign personnel to investigate serious accidents. Contractor will be notified of investigation results.

1.21.2 Accident Reports

Designate individual to track exposure data (hours worked); perform accident investigations; prepare reports and logs; and, notify Contracting Officer of accidents (to include subcontractors). Conduct accident investigations to establish causes for accidents and injuries. For an accident or work related illness which results in a lost workday or over \$2,000 in property damage, notify Contracting Officer's Representative within one work day providing information in paragraph "Notification" below. Complete Accident Investigation Report (ENG FORM 3394) and provide completed report to Contracting Officer within 5 work days of accident. For fatal accident, over \$200,000 damage, three or more persons hospitalized, or any accident which may result in adverse publicity to Corps Of Engineers, immediately notify Contracting Officer's Representative and District Safety Office using phone and fax numbers provided at Preconstruction Conference. Submit completed ENG 3394 as soon as possible after initial phone or fax notification. Accident Investigation Report form (ENG FORM 3394) and instructions for completing form are at <http://www.usace.army.mil/inet/usace-docs/forms/>.

1.21.3 Notification

Notify Contracting Officer with following information:

Contractor Name
Contract Number and Title
Type of contract
Location where accident occurred

Date and time of accident
 Names of personnel injured
 Extent of injury and property damage
 A brief description of accident (to include type of construction equipment used, PPE used, etc.).

1.21.4 Monthly Exposure Report

Submit a monthly exposure report to Contracting Officer. Exposure report is a total of employee-hours worked each month for all site workers, both prime and subcontractor.

1.21.5 Crane Notification

Notify Contracting Officer at least 10 working days prior to bringing crane equipment on-site so Contracting Officer may arrange for additional quality assurance checks.

1.22 BLASTING

NOTE: Delete in its entirety if not applicable.

**PARAGRAPH MUST BE COORDINATED WITH GEOTECHNICAL
 BRANCH PERSONNEL PRIOR TO USE.**

1.22.1 Regulations and References

The Contractor shall comply fully with all applicable sections of the following regulations:

(1) Organized Crime Control Act of 1970, Title XI, Regulation of Explosives (P.L. 91-452) (obtainable from Internal Revenue Service as Publication 730).

(2) Commerce in Explosives, Part 181 of Title 26, Code of Federal Regulations (implements the provisions of Title XI, Regulation of Explosives, and is obtainable from the Internal Revenue Service as Publication 739).

(3) Safety and Health Regulations for Construction, Title 29, Labor Chapter XVII, Bureau of Labor Standards, Department of Labor, Parts 1910 and 1926 (published in Federal Register, Volume 36, Number 75).

(4) COE EM 385-1-1, edition in effect on the date the solicitation for this contract is issued, and changes and amendments thereto.

(5) Interstate Commerce Commission Regulations.

(6) Applicable U.S. Coast Guard regulations and state, county, municipal, or port authority codes, rules, regulations, and laws.

(7) Federal Register, Volume 36, Number 10, 15 January 1971, Department of the Treasury.

1.22.2 Storage, Handling, and Security of Explosives

(1) The Bureau of Alcohol, Tobacco, and Firearms (ATF) has

enforcement, inspection, and investigative jurisdiction in all matters pertaining to explosives. The Contractor shall notify the appropriate office of the ATF in writing with copies to the local law enforcement authority and the Contracting Officer as to all related facilities, plans and procedures, prior to construction of explosives storage facilities, or receipt of explosives on the site. All transportation, storage, handling, and security of explosives shall be in strict accordance with ATF regulations.

(2) The Contractor shall be responsible for obtaining all licenses, permits, and approvals, and the keeping of accounts and records, as well as arranging the transportation and protection of all explosives on the project. Should the Contractor fail to comply with above requirements, the Contracting Officer may order a suspension of that part of work involved until the deficiencies are corrected. The Contractor's attention is also directed to subparagraph "Liabilities" of paragraph "Blasting Methods and Procedures" and subparagraph "Public Meeting" of paragraph "Preparation" below for additional specific liability to be assumed by the Contractor.

(3) All personnel proposed for involvement with explosives, prior to any such involvement, shall be interviewed, their employee records checked, and their history checked through local police records, for any indication of mental instability, criminal connection, or other factors which might render them a poor security risk. These records shall be made available to the ATF and the Contracting Officer for review. No person with any such risk indication shall be permitted any involvement with explosives, unless individually approved by law enforcement authorities.

(4) Any storage facilities for explosives shall be constructed, as a minimum, to conform to Type 2 Storage Facilities as specified in Part 181 of Title 26, Code of Federal Regulations, listed in the above references, subpart J, which includes requirements for hinges and hasps, and the locking system.

(5) Storage magazines/containers conforming to the referenced standards shall be enclosed by a 7-foot chain-link fence, with 3-strand barbed wire overhang mounted on steel arms facing outward at a 45-degree angle. The fence gate shall be secured at all times when not in actual use by 5-tumbler padlocks protected by 1/4-inch steel caps constructed so as to prevent sawing or lever action on the locks. The keys to the locks will be of a nonduplicating type and shall be strictly controlled by one approved individual.

(6) The explosives storage area shall be protected by security lighting installed in a manner that will provide illumination equivalent to normal daylight in the storage area.

(7) An approved armed security guard shall be posted at the storage site 24-hours per day while explosives are stored at the job site. All security safeguards described above shall be implemented by the Contractor.

(8) The Contractor shall keep a daily record of transactions, to be maintained at each storage magazine. The inventory records shall be updated at close of business each day. Records shall show class and quantities received and issued, and total remaining on hand at end of each day. The remaining stock shall be checked each day, and any

discrepancies that would indicate a theft or loss of explosive materials shall be reported immediately.

(9) Should a loss or theft of explosives occur, all circumstances and details of the loss/theft will be immediately reported to the nearest office of the ATF as well as to the local law enforcement authorities and the Contracting Officer's Representative.

1.22.3 Blasting Methods and Procedures

1.22.3.1 General

The Contractor's blasting program and methods shall be those necessary to accomplish the excavation shown on the contract drawings in accordance with the procedures specified herein. The Contractor will be required to make necessary plans, examinations, surveys, and test blasts to determine the quantity of explosives that can be fired without damaging property, and to thereafter control the quantity of explosives fired in any one blast to prevent injuries to persons or damage to structures, homes, utilities, vehicles, vessels moored or underway, or any property.

1.22.3.2 Liabilities

The Contractor's attention is called to Clauses PERMITS AND RESPONSIBILITIES and PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS of Section 00700 CONTRACT CLAUSES which define the Contractor's responsibilities relative to the references listed in the subsequent paragraphs. The Contractor shall assume all liability and hold and save the Government, its officers, agents, and employees harmless for any and all claims for personal injuries, property damages, or other claims arising out of or in connection with handling of explosives under the contract. The Contractor shall, in addition, process any and all claims of private citizens arising out of said use of explosives promptly; in particular, all property damage claims shall be acknowledged by the Contractor (or his agent) immediately, and the claimed damage inspected within 30 calendar days following initial notification, and processed to a conclusion (honored, denied, or compromised) within 90 calendar days after cessation of all blasting on the contract; but, in no case shall the claim(s) remain unresolved for a period exceeding six months.

1.22.3.3 Preparation

(i) Public Meeting. The Contractor shall make his specialists qualified in vibration and air blast control available for one day to prepare for and participate in a public meeting, conducted by the Contracting Officer to better inform the public about anticipated drilling and blasting operations. The specialists shall be prepared to answer any questions dealing with the magnitude of seismic motion or air blast overpressure expected and their impact on the public.

(ii) Pre-Blast Survey. The Contractor shall provide one person from his organization and his specialist on vibration control to work as a team with a representative of the Contracting Officer in making a pre-blast structural survey. A representative sample of structures (approximately 20 percent), as determined by the Contractor, that could receive seismic motion greater than 0.5 inch per second or air blast overpressure greater than 0.01 psi, will be inspected and their condition documented. Any existing outstanding architectural defects such as broken or fallen plaster or broken windows shall be

photographically documented.

1.22.3.4 Blasting Control

(i) General. The blasting program and methods shall be those developed by the test blasting program and procedure to accomplish the excavation shown on the contract drawings in accordance with the procedures specified herein.

(ii) Blasting. Prior to the commencement of blasting operations, the Contractor shall submit a Plan showing the location, size, spacing, type of explosives, sequence and pattern of delays (if any), and anticipated peak particle velocity and maximum peak positive air blast overpressure at the nearest structure to the blast, and description and purpose of special methods. Acceptance by the Contracting Officer of the Blasting Plan will not relieve the Contractor of responsibility to produce safe and satisfactory results as set forth by these specifications.

(iii) Vibration Control. Where blasting is necessary, the Contractor shall employ a specialist qualified in vibration control methods capable of analyzing results obtained from seismograph readings. A minimum of 30 calendar days prior to commencement of blasting operations, the Contractor shall provide the Contracting Officer with bona fides of the seismic specialist to include, but not be limited to, past experience, training, and education. The acceptability of the specialist is subject to the approval of the Contracting Officer. The Contractor shall provide a minimum of four seismographs to measure and record ground movements caused by each blast detonated under the contract. Seismograph operators shall be qualified personnel capable of setting up instruments at designated locations and efficiently recording the blast. The seismographs shall be placed at locations to include, but not limited to, the nearest buildings, structures, or utilities, and such locations are to be approved by the Contracting Officer. Blasting shall be controlled in such a manner that the maximum ground vibration level at any structure which is vulnerable to damage shall not exceed a zero-to-peak particle velocity of 2.0 inches per second nor an energy ratio of 1.0. The instrumentation shall record three orthogonal components (vertical, radial, and transverse with respect to the location of the blast) of particle velocity direct (or shall have sufficient resolution of acceleration or displacement such that particle velocity can be readily and accurately determined from the records). The instantaneous vector sum of the three directional components of vibration will be used to compute the maximum vibration level. The record for each blast shall consist of seismograph records identified by instrument number, location of instruments positively identified, date and time and location of blast, amount of explosives used, peak particle velocity, and all other data necessary to adequately control blasting operations.

A memorandum or telephone report on vibration intensity shall be submitted within 24 hours when specifically requested by the Contracting Officer or without request when such intensity exceeds a peak particle velocity of 1.5 inches per second. The Contractor shall submit a copy of the record in tabular form for each blast on a semi-monthly basis.

(iv) Air Blast Control. Where blasting is necessary, the Contractor shall employ a specialist qualified in making air blast overpressure measurements on selected detonations, analyzing the results obtained

and making air blast predictions for succeeding detonations. A minimum of 30 calendar days prior to commencement of blasting operations, the Contractor shall provide the Contracting Officer with the bona fides of the air blast specialist to include, but not be limited to, past experience, training, and education. The acceptability of the specialist is subject to the approval of the Contracting Officer. The maximum peak positive air blast overpressure at any structures, vehicles, or vessels moored or underway, with glass windows shall not exceed 0.02 psi. Blasting operations shall not be conducted from 1 hour before sunset to 2 hours after sunrise or when a temperature inversion or heavy low-level cloud cover exists. The peak positive air blast overpressure as developed by the Test Blast Program shall be accurately measured (within +/- 10 percent) at three or more locations and to peak overpressure levels at or below 0.01 psi. The air blast overpressures from the test events should be monitored at ranges extending from the range of the closest structure to any planned detonation outward of an overpressure level of 0.01 psi or over a range from 500 to 3000 feet, whichever is greater. Results from the initial monitoring of the Test Blast Program shall be used to predict air blast overpressures for succeeding events and to insure peak positive overpressures do not exceed 0.02 psi at the closest structure or vessel moored or underway. One copy of the air blast records from each test blast identified, date and time and location of blast, amount of explosives used, peak positive overpressure shown, and all prediction curves necessary to adequately control blasting operations shall be furnished the Contracting Officer at the completion of the initial test blasts.

1.22.3.5 Operational Blasting Plan

The Plan shall include as a minimum requirement the following items:

- (A) Proposed method of transportation, storage, and handling of explosives.
- (B) Procedure for monitoring the blast operations and handling misfires.
- (C) Location, size, depth, and spacing of blast holes, type of explosive and method of loading and detonating and maximum number of holes to be detonated per blast. Type of blasting machine to be used and when last tested.
- (D) Type of instrumentation to be used, manufacturer, and when last calibrated and/or certified.
- (E) List of licenses, permits and/or clearances required, when applied for, and date of approval or anticipated approval by Federal, State, and local agencies.
- (F) A format for maintaining a record of individual blasts throughout the life of the job designed to record pertinent data before, during, and after the blasting operation.
- (G) Names and qualifications of specialists for vibration control analysis and air blast overpressure measurements. Refer to specifications for exacting requirements. Names and addresses of all certified blasters and users.

(H) Plan showing location of warning signs and signals to be used. Method of controlling vessel traffic and communications (if applicable).

(I) Name and address of Contractor's representative to which any claims for damage due to blasting should be addressed.

(J) A test plan which encompasses the requirements of the test blast program specified below. This plan shall also include the planned test patterns and weights of explosives of each test blast with anticipated peak particle velocities and peak positive air blast pressures at structures most likely to receive damage from the test blast.

(K) The plan shall be signed by an officer of the company.

1.22.3.6 Test Blast Program

NOTE: Insert appropriate Area Office in submit
paragraph (iv) below.

(i) A test blast program shall be conducted by the Contractor consisting of up to 10 individual test blasts. The purpose of the test program is to allow the Contractor to establish safe limits of vibration and air blast overpressure. The test blast program shall be conducted and reported in strict accordance with procedures outlined in the sections of these specifications covering vibration control and air blast control.

(ii) Upon evidence of any damage to test structures, test blasting shall cease until the Contracting Officer has been notified, and adjustments made. The test events shall begin with a small number of charges and extend upward to the maximum yield to be used. The final test event shall simulate as close as practicable to the explosive charge type, size, overlying water depth, charge configuration, charge separation, initiation methods, and emplacement conditions anticipated for the largest detonations. One copy of the record for the test blasts shall be submitted in tabular form to the Contracting Officer daily.

(iii) After the test blasts, the Contractor shall examine the representative structures of the pre-blast survey as previously specified. All new damage resulting from the test blasting shall be reported in detail to the Contracting Officer, including photographs.

(iv) At the conclusion of the test blast program, the Contractor shall examine all reports, surveys, test data, and other pertinent information and conclusions reached shall be the basis for developing a completely engineered procedure for blasting. The procedure shall include sketches showing blasting patterns, weights of explosives, wiring, and charge emplacement. Four copies of the developed procedure shall be submitted review to the [ENTER NAME OF AREA OFFICE] Area Office, and upon completion of the review and acceptance, it shall be appended to and become a part of the aforementioned operational blasting plan. A maximum period of 7 calendar days will be required for review and acceptance by the Contracting Officer of the proposed procedure after receipt in the [ENTER NAME OF AREA OFFICE] Area Office.

Such review period shall not be the basis for a claim against the Government for delay. In no event shall operational blasting proceed

until the review of the developed procedure for blasting has been completed. If the procedure is not acceptable, the Contractor shall revise and resubmit the procedure. The Contracting Officer shall have 5 calendar days to review and accept the revised procedure.

1.22.3.7 Use of Drill Boat or Barge

(i) Provisions shall be made for jettisoning explosives overboard in emergencies.

(ii) No high explosives shall be stored on the boat or barge deck in the open except for the one case that is to be loaded immediately into the bore holes. Any explosives remaining on deck shall be returned to the day magazine prior to the firing of any blast.

(iii) The firing line reel or spool shall be mounted on the rig in a manner that it cannot be lost overboard. An approved blasting machine shall be used for detonation regardless of the number of caps used.

1.23 SAFETY EQUIPMENT

**NOTE: FOR USE WITH BLASTING PARAGRAPH. Delete in
 its entirety if Blasting is not applicable.**

1.23.1 Lightning-Detection Equipment

The Contractor shall furnish, maintain, and operate lightning-detection equipment during the entire period of blasting operations and/or during the periods that explosives are stored at the site. The equipment shall be approved by the Contracting Officer, and shall be similar and equal to the Litton TSM/C Thunderstorm Monitor and Lightning Warning Instrument, as manufactured by Litton Industries, Inc., Environmental Systems Division, Camarillo, California. The equipment shall be installed where approved by the Contracting Officer. When the lightning-detection device indicates a blasting hazard potential, personnel shall be evacuated from all areas where explosives are present.

1.23.2 Stray Ground Currents

Prior to blasting, a test shall be made for stray ground currents. The Contractor shall furnish both AC and DC voltmeters capable of reading 0.05 volts and shall employ the proper techniques in conducting the tests. Electrical blasting operations shall not be carried out when the maximum reading by the AC and DC voltmeters exceeds 0.05 ampere. The Contractor shall take all precautions outlined under "Stray Current", contained on pages 179 and 181 of DuPont's Blasters Handbook (16th Edition), to prevent premature detonation from stray ground currents.

PART 2 PRODUCTS

2.1 CONFINED SPACE SIGNAGE

Provide permanent signs at access covers for new permit required confined spaces. Signs wording: "DANGER -- PERMIT REQUIRED CONFINED SPACE - DO NOT ENTER" on bold letters a minimum of 25 mm one inch in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 1.52 m 5 feet.

2.2 FIRST AID KITS

Furnish one 16-unit first aid kit per 25 employees, inspect weekly for supplies and note on inspection form located at kit.

2.3 PORTABLE FIRE EXTINGUISHERS

Portable fire extinguishers shall be located and used in accordance with paragraph FIRST RESPONSE FIRE PROTECTION of Section FIRE PREVENTION AND PROTECTION of COE EM 385-1-1, inspected monthly, maintained, and recharged as specified in NFPA 10.

PART 3 EXECUTION

3.1 EMERGENCY MEDICAL TREATMENT

Contractor shall arrange with local authorities for emergency medical response, treatment and evacuation. Provide first aid kits in areas of work and inspect weekly to ensure stockage. Provide 2 personnel trained in first aid and CPR for each shift in accordance with paragraph GENERAL of Section MEDICAL AND FIRST AID REQUIREMENTS of COE EM 385-1-1.

3.2 ACCIDENT PREVENTION

**NOTE: Select appropriate agency; delete fire and
 safety regulations requirement if not applicable.**

Comply with COE EM 385-1-1, NFPA 241, approved APP, AHA, and other related submittals. Contractor shall become familiar with safety requirements in Clause ACCIDENT PREVENTION of Section 00700 CONTRACT CLAUSES; COE EM 385-1-1; COE CESAJR 385-1-1; COE CESAJP 385-1-2, and latest OSHA standards, applicable U.S. Coast Guard safety regulations, and applicable [State of Florida] [Commonwealth of Puerto Rico] [Territorial] laws and regulations [and local fire and safety regulations]. Contractor shall have full knowledge of personal protective equipment to be provided workmen and applicable safety standards. COE EM 385-1-1 and COE CESAJR 385-1-1 are consistent with OSHA Construction Safety and Health Regulations 29 CFR 1926. For operations not covered under COE EM 385-1-1 or COE CESAJR 385-1-1, OSHA standards shall be complied with. When there is no OSHA standard, comply with Department of the Army, Department of Defense, U.S. Coast Guard or National Consensus Standards (e.g., API - American Petroleum Institute). Contractor shall only use plant and equipment in compliance with contract safety requirements.

3.3 CONFINED SPACE ENTRY

Establish a confined space entry permit system. A permit shall be issued for each confined space entry. Permits shall include location of work, work description, employees assigned entry, entry date and time, results of atmospheric tests performed, person performing test, authorization and permit expiration time. A sample confined space permit is at Jacksonville District's Construction web site:
<http://www.saj.usace.army.mil/conops/index.htm>. Post permits at entry point when working in confined space and renew when entry personnel change. Forward a copy of confined space permits to Contracting Officer prior to entry.

3.4 OIL AND HAZARDOUS MATERIAL SPILLS AND CONTAINMENT

Report all spills to Contracting Officer immediately. Clean-up spills in accordance with COE EM 385-1-1 and MSDSs. Use dikes, curbs to prevent spread of oil or hazardous materials from storage tanks and piping leaks. Comply with Section 01355 ENVIRONMENTAL PROTECTION reporting.

3.5 DIVING OPERATIONS

**NOTE: Include paragraph in all contracts where work
 is adjacent to, on, or over water.**

Submit a Dive Operations Plan when work is performed adjacent to, on or over water. No matter if a dive is actually planned or only required as a contingency (i.e., most dredging projects) submit a Diving Operations Plan for Contracting Officer's approval. Dive Operations Plan shall cover all requirements in Section CONTRACT DIVING OPERATIONS of COE EM 385-1-1 and Appendix CONTRACT DIVING OPERATIONS of COE CESAJR 385-1-1. Dive Operations Plan consists of a "Safe Practices Manual" describing Contractor's diving program and a "Dive Plan" describing site specific information of proposed dive or contingency dive. Safe Practices Manual, Dive Plan and revisions shall have cover sheets signed and dated by Contractor. When diving is subcontracted, cover sheets shall also be signed and dated by diving contractor's principal or authorized representative.

3.5.1 Dive Operations Reviewer

Dive Operation Plans shall be submitted by Contractor to Contracting Officer in accordance with Section 01330 SUBMITTAL PROCEDURES. Dive Operations Plans are reviewed by Jacksonville District Diving Coordinator. A copy of the Dive Operation Plan shall be furnished to:

U.S. Army Corps of Engineers, Jacksonville District
 ATTN: CESAJ-CO-CQ (Mr. Tappmeyer or Mr. Vecchitto)
 P.O. Box 4970
 Jacksonville, FL 32232-0019

Diving Coordinator fax is 904-232-3696.

3.5.2 Dive Operations Execution

Execute dives in accordance with approved Dive Operations Plan submittal; Section CONTRACT DIVING OPERATIONS of COE EM 385-1-1; and, Appendix CONTRACT DIVING OPERATIONS of COE CESAJR 385-1-1. Contractor shall submit completed daily dive logs at the end of each dive day. Daily dive logs shall be faxed to District Dive Coordinator 904-232-3696 or his authorized representative. Contractor shall use COE form ENG 4615 and ENG 4616 to record daily diving activities. Dive forms may be downloaded from Jacksonville Construction-Operations web site at:
<http://www.saj.usace.army.mil/conops/diving/DistrictDiving.html>.

3.6 PERSONNEL PROTECTION

Designate and mark safety zones requiring personal protection. Examples include hard hat zone, areas where eye and hearing protection is required.

3.6.1 Hazardous Noise

Provide hazardous noise signs, and hearing protection, wherever equipment and work procedures produce sound-pressure levels greater than 85 dBA steady state or 140 dBA impulse, regardless of duration of exposure.

3.7 ELECTRICAL WORK

Underground electrical spaces shall be certified safe for entry before entering to conduct work. Cable intended to be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with Contracting Officer and utility owner for identification. No outage request will be accepted until Contractor satisfactorily documents circuits have been clearly identified. In walls or concealed areas use non-conductive fish tape to pull wire. Perform all high voltage cutting remotely. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor AHA.

3.8 WORK IN CONFINED SPACES

Comply with the requirements in paragraph CONFINED SPACE of Section HAZARDOUS SUBSTANCES, AGENTS AND ENVIRONMENTS COE EM 385-1-1. Any potential for a hazard in the confined space requires a permit system to be used.

a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See subparagraph "Permit-required confined space entry procedures" of paragraph CONFINED SPACE of Section HAZARDOUS SUBSTANCES, AGENTS AND ENVIRONMENTS of COE EM 385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.

b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained.

c. Ensure the use of rescue and retrieval devices in confined spaces greater than 1.5 m 5 feet in depth. Conform to subparagraphs "On-site rescue/emergency teams", "Off-site rescue and emergency services", and "To facilitate non-entry rescues, retrieval systems or methods" of paragraph CONFINED SPACE of Section HAZARDOUS SUBSTANCES, AGENTS AND ENVIRONMENTS of COE EM 385-1-1.

d. Sewer wet wells require continuous atmosphere monitoring with

audible alarm for toxic gas detection.

e. Include training information for employees who will be involved as entrant attendants for the work. Conform to subparagraph "Training" of paragraph CONFINED SPACE of Section HAZARDOUS SUBSTANCES, AGENTS AND ENVIONMENTS of COE EM 385-1-1.

f. Entry Permit. Use ENG FORM 5044-R or other form with the same minimum information for the Daily Confined Space Entry Permit, completed by the qualified person. Post the permit in a conspicuous place close to the confined space entrance.

3.9 HOUSEKEEPING

3.9.1 Clean-up

All debris in work areas shall be cleaned up daily or more frequently as necessary. Construction debris may be temporarily located in an approved location; however, garbage accumulation must be removed each day.

3.9.2 Dust Control

In addition to the dust control measures required elsewhere in contract documents, dry cutting of brick or masonry shall be prohibited. Wet cutting must address control of water run off.

3.10 ACCIDENT SCENE PRESERVATION

For serious accidents and accidents involving weight handling equipment, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Contracting Officer.

3.11 QUALITY CONTROL

NOTE: Select appropriate Section reference.

Quality Control and Safety are supporting complimentary functions. Include safety activities and documentation of meetings and site safety inspection as a part of Quality Control activities and QC Daily report required in [Section 01451 CONTRACTOR QUALITY CONTROL.] [Section 01452 DREDGING/BEACH FILL PLACEMENT - CONTRACTOR QUALITY CONTROL.]

3.12 SAFE ACCESS AND FALL PROTECTION

NOTE: Use this requirement if there will be any exposure to fall hazards.

Furnish ladders, nets, guard rails and other required fall protection equipment to provide safe access and fall protection in accordance with Section SAFE ACCESS AND FALL PROTECTION of COE EM 385-1-1. Furnish personal protective equipment of body harnesses, lanyards, lifelines in accordance with subparagraph "Lineman's equipment" of Section PERSONAL PROTECTIVE AND SAFETY EQUIPMENT of COE EM 385-1-1. Furnish safety and debris nets designed and tested in accordance with paragraph SAFETY AND DEBRIS NETS - DESIGN AND TESTING of Section PERSONAL PROTECTIVE AND SAFETY

EQUIPMENT of COE EM 385-1-1. Identify features of work and work areas with high falling risk requiring fall protection. Examples include: work above six feet; work on scaffolding; work near edges or penetrations of floors; roofs or decks; steel erection; overhead electrical work; dredging; work with construction lift equipment. In preparatory phase review activity hazard analysis, required equipment, employee supervision and supervisor inspection of equipment. In initial phase provide employee training and perform supervisor inspection of PPE and other fall protection equipment. During follow-up phase perform on going supervision and inspection by supervisors, safety and quality control staff.

3.12.1 Fall Protection Training

Train employees exposed to fall hazards in use of PPE, hazard identification, avoidance, and policy to correct hazards. Train Supervisors to inspect fall protection equipment and supervise work to reduce fall risks.

3.12.2 Sample Scaffold

NOTE: Require a sample scaffold when scaffolding over one story is used or set up for a long time (over two weeks). Examples are Painting; CMU; or Bridge Pier work.

Erect a minimum 10 foot long by 2 section high on-site scaffold sample prior to erection of work scaffold. Train employees and supervisors in safe access procedures and equipment inspection. Retaining scaffolding sample as long as required for construction tasks or as directed by Contracting Officer.

3.13 ACCESS AND HAUL ROADS ADJACENT TO CANALS

For each project involving canal hazards, submit an APP, access and haul road plan, and AHA that identify and provide control measures for canal hazards. The Contractor shall ensure that access and haul road plan complies with COE EM 385-1-1, and includes items indicated below. Construct access and haul roads in accordance with the paragraph HAUL ROADS of Section 01500 TEMPORARY CONSTRUCTION FACILITIES and COE EM 385-1-1.

3.13.1 Inspection

Inspect access and haul roads, submitting the safety checklist developed by the SOH office, and revise the access and haul road plan when additional haul and access road hazards are identified at the project site.

3.13.2 Signs and Barriers

Indicate proposed placement of signs, barriers and speed limits in APP. Place sufficient signs and barriers to indicate the drop-off hazard posed by an adjacent canal. See MUTCD, PART 6 for guidance on signs. Place stop signs at all intersections. Place speed limit signs approaching and after intersections, before curves, and otherwise every half mile/800 meters. Place U-channel steel posts with highly visible flagging or reusable polypropylene fabric fencing along the edge of each access or haul road adjacent to a canal. The distance between posts shall be sufficient to support the fabric (if used) or no greater than indicated in the paragraph

HAUL ROADS of Section 01500 TEMPORARY CONSTRUCTION FACILITIES.

3.13.3 Equipment and Vehicles

Ensure safety and escape features on all equipment and vehicles are operational.

3.13.4 Briefings and Enforcement

Brief every employee during orientation and toolbox meetings about recognizing and controlling canal hazards, using the APP, access and haul road plan, and AHA for work on roads adjacent to canals. Inform all employees that while operating equipment and vehicles, they shall not engage in any activity (eating, drinking, smoking, use of cell phone, etc.) that would interfere with safe operation. Inform all employees operating equipment and vehicles that they will be subject to disciplinary action, including termination, if cited for speeding and other reckless driving. Include a plan in the APP for monitoring construction traffic for speeding and other reckless driving.

3.14 CONSTRUCTION FORMS AND DETAILS

From the Jacksonville District Home Page, click the links ORGANIZATIONS, ENGINEERING, then CONSTRUCTION FORMS AND DETAILS. See web site address www.saj.usace.army.mil/cadd/end/construction_forms_and_details.htm.

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